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GREEN SUPPLY CHAIN MANAGEMENT PRACTICES-THE EFFECTIVENESS OFGREEN PRACTICES TO THE ENVIRONMENTAL PERFORMANCE

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ABSTRACT

The purpose of this research is to identifythe effectiveness Green Supply Chain Practices to the environmental performance. Green Supply Chain Management is a fundamental part of sustainable supply chain management. The pressure on companies to embrace green processes has increased significantly in the last few years. Within the broad concept of green supply chain management, a review of the existing literature has highlighted a need to understand how Green Supply Chain Practices (GSCP) can contribute to improving company performance from an environmental point of view.This research seems to reinforce the proposition by Carter and Rogers (2008), suggesting that "firms that are dependent upon key, external resources can improvetheir economic sustainability through vertical coordination". Companies can improve their overall performance (thus, also economic sustainability) through the adoption of Green Supply Chain Practices. This paper aims to identify the Green Supply Chain Practices adopted by companies in terms of specific practices implemented and to explore how this adoption can improve the environmental performance. From the previous studies, a new theoretical framework will be developed for the future research.

Keywords
Green Supply Chain Management (GSCM), Green Supply Chain Practices (GSCP), Performance, Supply Chain Management.

1.0 INTRODUCTION

Organizations have been paying attentionto environmental preservation since the negative impacts of industrialization were made public. In addition,balancing economic and environmental performance has become increasingly important for organizations facing competitive, regulatory, and community pressures. With increased pressures for environmental sustainability, it is expected that enterprises will need to implement strategies to reduce the environmental impacts of their products and services (Qinghua*et al.*, 2005).

GSCM have the practice that can sustainable the environment performance. The term "Green Supply Chain Practices (GSCP)" is commonly used in the research literature to refer to a variety of activities performed by an organization in order to minimize their impact on the natural environment (Vachon and Klassen, 2006).

GSCP are classified by the several categories, namely internal environmental management, green purchasing, customer cooperation with environmental concerns, investment recovery, eco-design dimensions, distribution strategies and transportation and warehousing and green building. GSCM can give impact to the potential on the company performance which includes impact on environmental performance, economicperformance and operational performance. But the intention of this research is only to identify the effectiveness of green practices to the environmental performance.

Also, it is need to be sustaining for the good environment. These can also improve our environment performance. By the practices of the GSCM, our environment can be sustained with a good condition without any pollution. But to make this performance of green supply chain is sustainable, it can be a hard to make because all the company must use the green supply chain management practices and follow this practices.This paper aims to identify the Green Supply Chain Practices adopted by companies in terms of specific practices implemented and to explore how this adoption can give impact the environmental performance.

2.0 LITERATURE REVIEW

2.1 Green Supply Chain Management (GSCM)

Green Supply Chain Management (GSCM) is defined as the management of raw materials, parts/components and processes from suppliers to manufacturers to customers and product take back with improvement to environmental impacts though lifecycle stages (Allen H. *et al*., 2010). The definition of GSCM definition has ranged from green purchasing to integrated supply chains flowing from supplier, to manufacturer, to customer and reverse logistics. GSCM has emerged as an important new approach for enterprises to achieve profit and market share objectives by reducing environmental risk and impact (van Hoek, 1999).

With the increased environmental concerns during the past decade, awareness is growing that issues of environmental pollution accompanying industrial development should be addressed together with supply chain management, thus contributing to the initiative of GSCM.GSCM can also promote efficiency and synergy among business partners and their lead corporations, and helps to enhance environmental performance, minimize waste and achieve cost saving.

2.2 Green Supply Chain Practices (GSCP)

The term "Green Supply Chain Practices (GSCP)" is commonly used in the research literature to refer to a variety of activities performed by an organization in order to decrease their impact on the natural environment. Another key distinction concerns the orientation of such practices: according to Vachon and Klassen (2006), GSCP would include externally oriented practices only, which is environment-related activities involving at least another organization in addition to the focal company.

In turn, these can be divided into environmental monitoring (supplier requirement for compliance with a voluntary code of practice or public standard), and environmental collaboration (development of co-operative activities to address environmental issues in the supply chain).In contrast, the scope of the analysis conducted on GSCP by Sarkis*et al.* (2010) is broader and covers both internal (i.e. intra-organizational) and external (i.e. inter-organizational) practices.

Internal practices include implementing environmental management systems andinvestment recovery.External practices include green purchasing and co-operation with customers for green packaging.The adoption of both internal and external GSCP has been investigated by several authors in either sectorial or cross-sectorial studies, in terms of specific types of practices implemented, and level of adoption of each practice. For example, Zhu and Sarkis (2004) conducted empirical research across several sectors.

According to Tate *et al*., (2010), depending on the type of industry as well as size and geographic location, different companies are likely to put more emphasis on specific green areas and activities. However, only limited research has been conducted so far on the links between the internal and external GSCP adopted by organizations.According to van Hoek (1999), a focus on the entire supply chain is necessary in order to fully understand the impact of business practices on the environment. On the other hand, the extant literature mainly focused on specific green facets of supply chain management, such as green design, repairable inventory, production planning and control for remanufacturing, green manufacturing and product recovery and green purchasing.

2.3 Review of previous studies

Year	Title/Author	Findings
2012	Green Supply Chain Management in China: pressures, practices and performance Sara Perotti, Marta Zorzini and Enrico Cagno	-Developed the green practices which is internal environment management, green purchasing, investment recovery, eco-design practices and cooperation with customer.
2012	Green Supply Chain Management and organizational Performance Sang M. Lee, Sung Tae Kim and Donghyun Choi,	-Establish green system and company with environmental regulations in producing parts and components.
2010	Critical factors for implementing green supply chain management practice. Allen H. and Chia-Wei Hsu	-Develop the supplier management, product recycling, organization involvement and life cycle management.
2004	A study on supply	-Building customer-

	chain management practices Kwai-Sang Chin, Jendy P.F. Leung, Xiaoqing Tang,	supplier relationship, re-engineering material flow, employing information and communication technologies.
2004	Green supply chain practices and company performance: the case of 3PLs in Italy. Qinghua Zhu, Joseph Sarkis and Yong Geng	-Developed the green practices which is internal environment management, green purchasing, investment recovery, eco-design practices and cooperation with customer.
2001	Green purchasing practices of US firms. Hokey Min and William P. Galle	-Evaluate the effects of green purchasing on the firm's supplier selection, waste management, packaging and regulatory compliance.

From the previous studies, this has been proven that green practices has been conducted can have an impact on environmental performance. From the previous studies, the most important green practice conducted is internal environment management, green purchasing, investment recovery, eco-design practices and cooperation with customer. This is because this green practices have been made for several years and can be identified by the researcher.

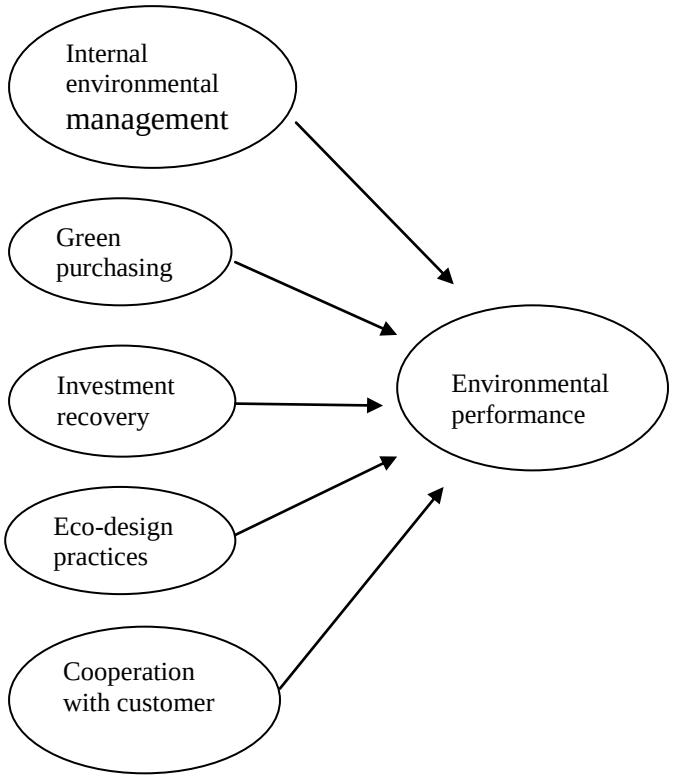
3.0 METHODOLOGY

Methodology for this study only uses theoretical methods available in the relevant journals. The data sources for this study only focused on secondary data not require for primary data. This secondary data obtained from various journals from the internet. But not fully information can obtained because the issue of a Green Supply Chain Practices (GSCP) is commercial.Previous literature review of Green Supply Chain Management (GSCM), and Green Supply Chain Practices (GSCP) have been conducted using journals, book and magazines. From the internet also allows the researchers to achieve a variety of sources and the journals.There are also several sources of journals to be paid to get on the internet. Therefore, researchers do not have enough information to make a research.

4.0 FINDINGS

Based on the review of previous studies, it showed that five main green supply chain practices that have impact on the environmental performance. There are internal environment management, green purchasing, investment recovery, eco-design practices and cooperation with customer.

Figure 1: classified of green practices that have an impact to environmental performance



Through the study of previous studies GSCP has influenced on environmental performance. Example on environmental performance effects are as reduction of air emission, reduction of waste water, reduction of solid wastes, decrease of consumption for hazardous/harmful/toxic materials, decrease of frequency for environmental accidents, improve a company's environmental situation. Examples of company performance are economic and operational performance.

Five main green supply chain practices that havean impacton the environmental performance are the internal environment management, green purchasing, investment recovery, eco-design practices and cooperation with customer. These five main green practices has been proven by empirical research by the author on year 2012, which is Sara Perotti, Marta

Zorzini and Enrico Cagno. The title of journal is Green Supply Chain Management in China: Pressure, Practices and Performance. These five main of this green practices have also been conducted in the title of journal is Green Supply Chain Practices and Company Performance: the case of 3PLs in Italy. The author is Qinghua Zhu, Joseph Sarkis and Yong Geng on year 2004.

Even if findings reveal an overall increasing interest towards environmental issues, thecurrent level of adoption of GSCP is still limited amongst the company investigated as well as their benefits in terms of company performance. Some players have shown a more proactive attitude and started benefiting substantially from the adoption of GSCP, mainly in terms of environmental performance.

5.0 DISCUSSION &CONCLUSION

For the conclusion, as for the environmental performance, it is interesting to mention a reduction in energy consumption, air emissions, and fuel consumption. Such results are aligned with the expected impact by GSCP that are commonly adopted among thecompany (e.g. effective shipment consolidation and routing in order to minimizethe distance travelled). These types of performance are likely to become more andmore strategic over time, as they are strongly linked to evolving regulations, and thevariability of energy costs.

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